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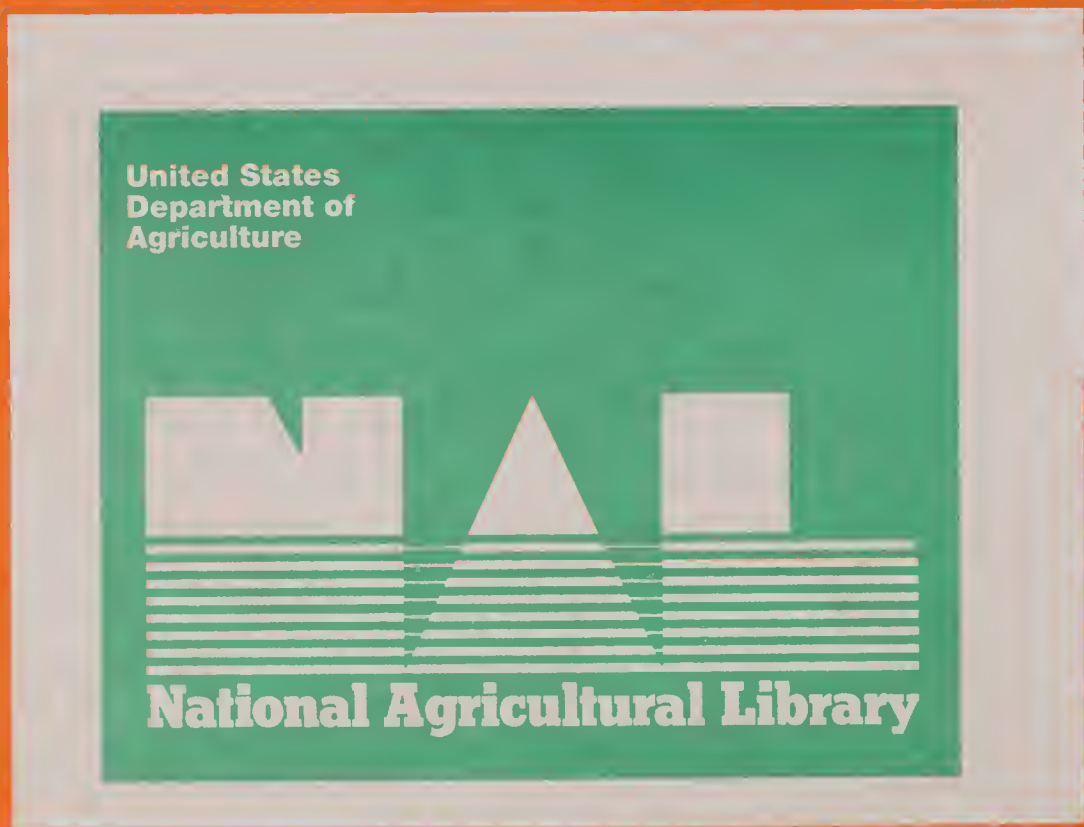


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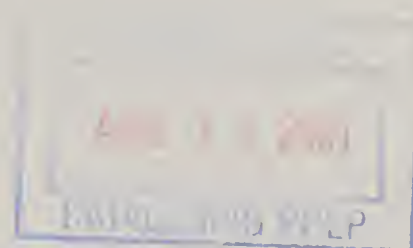
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LAND TENURE DYNAMICS

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In the past two decades, significant changes have occurred in the way that resources have been brought together and utilized in agricultural production. Current trends in U.S. tenure patterns indicate a growing separation of the use and ownership of land resources by farm operators [9].

Economists consider land, labor, and capital to be the basic agricultural input resources. In teaching and research, economists utilize static firm theory and marginal analysis to specify optimum resource allocation and examine production problems in an attempt to understand agricultural developments and formulate recommendations and farm policy. In general, this approach using static firm theory has served well. However, the assumption that land is a typical agricultural input resource and the absence of a theory concerning the use and ownership of land through time has led to difficulties in terms of understanding land ownership patterns of farmers, as well as the more recent future directions of land tenure relationships in agriculture.

It is the contention of the authors that the pattern of land tenure associated with resources used by farm operators is primarily a function of (1) the firm growth environment present in the agricultural industry and (2) the view that farm operators and/or land investors hold with regard to the potential short- and longrun capital accumulation and

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investments through the utilization of borrowed and owned funds. The purpose of this paper is to demonstrate that firm growth analyses provides a relevant framework for examining this hypothesis. Three basic suppositions with regard to this hypothesis are (a) capital is more limited to the farm operator for investment in ownership than for annual operating purposes, (b) cash capital accumulation is greater in the short-run for capital used for rented land resources than for ownership investment purposes, and (c) total capital accumulation is greater in the long-run for land ownership investment purposes than for operating capital used for rented land resources.

Technology and the Growth Environment

Measured in terms of any financial or physical standard, the average size of unit handled by the farm operator has a tendency to grow each year. It is not difficult to document the growth environment that has historically occurred in agriculture, nor is it difficult to conclude that farm firm growth in terms of increasing the land base is, in general, a prerequisite to being a viable producing unit for land oriented firms in agriculture. Technology is probably the major factor in this process. Innovative farm operators are eager to adopt new technology because it usually results in lower unit costs and/or greater production and more net income. However, much of the technology that is developed must be adopted in such lumpy values that these units are generally overextended on present farm sizes when measured in terms of economic efficiency. Thus, new technology tied with old existing farm sizes become underutilized and the profit incentive itself motivates some producers to expand their size of operation.

However, as more producers adopt the new technology the benefits tend to disappear when their aggregate actions result in more products and lower prices. This may also hold true with commodities under minimum price programs if surplus products result in allotment reductions. At the same time, many producers find that they cannot take advantage of or effectively utilize the new technology as a result of their small size producing unit. Over a period of time, the old technology disappears and, in general, all producers are forced to adopt the new technology. The resulting economic inefficiency, due to the lumpy values of the new technology and small producing unit, requires that farm operators must generally increase their land base or seek other means of income and employment. Producers unable to adjust may become a vital statistic of the low farm income problem [6, p. 28].

The Role of Capital Accumulation

Given the necessity for the growth environment in agriculture, an understanding of tenure in a farm firm growth setting requires a knowledge of growth alternatives and strategies available to farm operators. The strategies are consistent with economic theory and the relevant alternatives are those which give operators the opportunity to maximize the accumulation of wealth subject to the level of capital restrictions of the operators.

Influence of Capital Restrictions

The importance of capital utilization to farm operators faced with various levels of restrictions on capital gives emphasis to the point that alternative control and use of land resource is a function of the way that

the entrepreneur views the flow of returns from owned versus rented resources. As early as 1940, Schultz made reference to capital availability and land tenure alternatives facing farmers when he indicated that it is necessary to separate the goals which lie back of the movement to bring about less farm tenancy from the probable economic effects of public action designed to attain such goals. He stressed that within the framework of present institutions and practices, farmers who utilize capital by hiring these funds from outside sources in order to establish or expand a farm size are likely to obtain sufficient capital to do this by renting rather than borrowing [8, p. 309].

The most obvious case where capital is more limited to farm operators for investment in ownership than for annual operating purposes is where all land operated must be purchased on a cash basis (no borrowing of land acquisition capital) [3, 7]. Given current land values and capital structures in agriculture, relatively few farm operators who have expanded their land base in recent years could have acquired the additional land through this approach alone. Farm resource purchases that are financed through long or intermediate term capital loans (non-operating capital loans), particularly real estate loans, required some specified level of equity on the part of the borrower. This situation imposes capital limitations on farm operators who make ownership investments. On the other hand, the nature of land renting is such that no equity requirements are imposed or, in any event, the required farm operator equity levels for land renting are comparatively less than those required when land acquisition occurs through land purchases. As a matter of fact, a high proportion of land is rented under conditions where rental payments are actually made after its utilization in production or rent payments postpaid at the time of harvest.

Another important condition that tends to make farm ownership investment capital more limiting than farm operating capital is that demand and supply conditions differ for the two types of capital. Demand and supply conditions for farm operating capital loans are based primarily upon agricultural productivity. Neither the demand for a high proportion of the total farm investment loans, particularly real estate loans, nor the supply of farm investment loans are necessarily based upon agricultural productivity. Herein, lies the problem for many farm operators and leads to the condition where farm operator capital is more restrictive for investment in resource ownership than for annual operating purposes. The implications of capital limitations within agriculture leads to the conclusion that ownership investments in farmland may come from sources outside of agriculture. Investors other than farm operators or farm operators who are investors should be expected to dominate agricultural resource ownership under conditions where agricultural productivity cannot support agricultural resource purchases.

Capital Accumulation Characteristics

A unique feature of agricultural land is the apparent difference in value of the land that can be justified from farm earnings and the price at which land sells [4, 5].

Rental rates on land used in agricultural production are generally less than the opportunity returns to landowners based on the current market price of land times the market rate of interest. This is due to the unique feature that the market value of agricultural land is not based upon its agricultural productivity. Therefore, farm operators faced with limited capital find that cash capital accumulation is greater when land

resources are rented rather than owned [3, 7]. Entrepreneurs with limited capital and given the alternative to rent resources, thus, become attracted to the rewards of bringing rented resources together and accepting the ultimate monetary returns and risks of combining goods and services committed to the production process. Through time, the incentive for farm entrepreneurs to become land investors may change as their capital position changes.

When an individual or a farm operator invests in land ownership, the total annual gross return to ownership is what that resource will earn if leased out, or the contractual rent it will command plus any change in the market value of the land plus any possible retention in income (income tax savings) that results from ownership [1, 2]. Expenses against this return include taxes, plus a charge for investment, plus any ownership transfer cost that may be incurred if the land is being sold or purchased. Therefore, the fact that rental rates on land are below the investment returns does not mean that the total capital accumulation under conditions of land ownership is negative. In general, the opposite has been true. Capital accumulation has been positive due to the relatively high rates of appreciation in land values and tax savings through capital gain provisions.

Theoretical Framework

The decision model that entrepreneurs in farm production face with regard to different tenure alternatives may be visualized as a cost minimization problem. For a given level of output, a farmer entrepreneur will use the combination of owned and rented land resources that minimizes land costs. In such a setting, owned land and hired land are perfect substitutes ($\Delta X_r / \Delta X_o = 1$) and the quantity of each resource used will depend

entirely on the price relation between the investment cost of owned land (P_{ϕ}) and the cost of renting land (P_r). Three possibilities exist. If the cost of renting is less than the investment cost of owning land, or (P_{ϕ}/P_r) is greater than 1.0, only hired land should be employed. If the investment cost of owned land is less than the cost of renting, all land should be owned. If the relative prices are the same, the farmer entrepreneur is indifferent between owning and renting.

Under conditions where the farmer entrepreneur faces a severe capital restriction and land can be rented for less than the investment cost of owning land then the farmer's costs are minimized by renting. However, the entrepreneur's land tenure choices over time (which allows capital accumulation) may change.

After sufficient capital has been accumulated, and it is no longer a limiting factor, the entrepreneur can be an investor in land ownership, as well as a farm operator. As capital accumulates, the real price at which land rents (or the real cost for renting) becomes $P_r + f(K) = P'_r$ and where $f(K)$ is equal to the capital accumulation forthcoming as a result of being a landowner, the relative difference between the cost of rented and owned land began to narrow. Finally, the real cost of renting land is greater than the cost of owning land, or (P_{ϕ}/P'_r) is less than 1.0, and all additional land added to the operation should be purchased. The growth path under this condition becomes one in which the entrepreneur moves from a full renter to an owner-renter.

A similar analysis could also be made by starting from any other tenure position. A full landowner, for instance, with limited capital could expand initially by renting, and then with accumulated funds invest

further in the land resource. The key point to be made in such an analysis is that land ownership takes place because the entrepreneur is interested in returns from the standpoint of both a farm operator and a landowner.

Implications and Extensions

These observations on land tenure dynamics lead to the hypothesis that some of the major factors associated with land tenure patterns in agriculture include (1) the firm growth environment in agriculture, (2) the capital restrictions of producers, (3) cost differentials between rented land and owned land, (4) the appreciation of land values in general, and (5) tax savings through capital gain provisions.

The hypothesis offers a relevant framework for considering the land resource allocation problem. Land used in agricultural production is a unique resource to be allocated on the basis of capital accumulation through time, rather than conventional marginal cost analysis.

The hypothesis also allows us to understand the problem that financial institutions have in living up to expectations in terms of their service to agriculture. As a result of the uniqueness of land, a market value which is different from its value in agricultural production, these lending institutions have no choice but to serve land investors rather than farm operators. The incidental service of real estate financial institutions to farmers stems from the fact that some land investors are also farm operators.

It helps to explain why some farm operators are land renters and others are landowners; i.e., some entrepreneurs are land investors as well as farm operators. It also explains the growing separation of the use and ownership of land resources in agriculture. Farm operator capital

is limited for purposes of land acquisition as a result of the high market values of land, equity and payback requirements based on agricultural productivity, and the high farm firm growth requirements in agriculture. Under these conditions, capital accumulation is maximized by a policy of renting additional land rather than investing in land ownership.

Finally, the theory helps us estimate future developments and structural relationships in agricultural production and its land ownership patterns. The continuation of the growth environment in agriculture will likely mean that capital for investment purposes by farm operators will continue to be limited. Thus, the implications for land tenure patterns in agriculture will likely be a continuation in the separation of use and ownership of the land resource.

These observations on land tenure dynamics lead to the conclusion that a relevant research framework for analyzing farm production adjustment problems lies within a firm growth or capital accumulation context. Within this framework, the growing separation of the use and ownership of land raises researchable questions relating to the characteristics of land-owners and land investors, their relationships to farm operators, and the effects on agricultural production and agricultural adjustments. A number of firm growth studies have been conducted and this is a popular area of research. The objectives of at least two regional research projects are directed to questions relating to farm firm growth.¹ Most of the farm firm growth studies deal primarily with internal farm firm variables. The methodology employed usually involves an attempt to fit well developed firm theory into a time dimension. This approach will meet with limited success

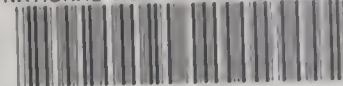
¹Reference is made to the Great Plains Research Committee, Number 12, and to the Western Regional Technical Committee, Number 104.

because the interrelationships between farms and between farms and the nonfarm economy, in many respects may be just as important to agricultural adjustments as matters pertaining to internal firm factors. With fewer, larger and more productive farms, externalities between producing units involving problems of land market values, technological progress, resource acquisition, resource use, tenure and structural production and marketing problems will become more important in the agricultural production industry. There is a void in knowledge and economic theory regarding these important areas, particularly as these questions relate to farm firm growth and farm adjustments.

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